IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claim 2, and AMEND claims 1, 3, and 4 in accordance with the following:

1. (Currently Amended) [[The]]A method for rendering using symplectic ray tracing, the method comprising ~~the steps of~~:

fixing [[the]]a location of observation[[,]];

fixing a view screen of observation;

practicing [[the]] symplectic ray tracing;

acquiring [[the]] color information ~~of the color~~ where [[the]] light rays cross [[the]]a surface of ~~the objects~~an object; and

rendering the ~~objects~~ object according to the ~~information of the~~ color information acquired,

wherein practicing symplectic ray tracing includes

deriving a pre-stored Hamiltonian corresponding to the object;

acquiring all derivatives of the Hamiltonian by applying fast automatic differentiation techniques;

forming a Hamilton's canonical equation; and

practicing symplectic integration by applying a symplectic Euler method to the formed Hamilton's canonical equation.

2. (Cancelled)

3. (Currently Amended) [[The]]An apparatus for rendering using symplectic ray tracing, the apparatus comprising:

[[the]]a fixing section [[of]] fixing [[the]]a location of observation, and fixing a view screen of observation;

[[the]]a practicing section [[of]] practicing the symplectic ray tracing,

[[the]]an information acquiring section [[of]] acquiring ~~the information of the~~ color information where [[the]] light rays cross [[the]]a surface of ~~the objects,~~an object; and

[[the]]a rendering section [[of]] rendering the ~~objects~~object according to the color information ~~of the color~~ acquired,

wherein the practicing section derives a pre-stored Hamiltonian corresponding to the object, acquires all derivatives of the Hamiltonian by applying fast automatic differentiation techniques, forms a Hamilton's canonical equation, and then practices symplectic integration by applying a symplectic Euler method to the formed Hamilton's canonical equation.

4. (Currently Amended) [[The]]An apparatus for rendering using symplectic ray tracing as ~~set forth~~ in claim 3, wherein the practicing section ~~of practicing the symplectic ray tracing is comprised by~~ includes:

[[the]]a forming section [[of]] forming the Hamilton's canonical equation by applying [[the]] fast automatic differentiation techniques, and

[[the]]a symplectic integration section [[of]] practicing symplectic integration by applying the symplectic Euler method to the formed Hamilton's canonical equation.